

Attachment
Topics to be Addressed in the In-Use Compliance Test Plan Proposal

I. Retrofit technology to be evaluated and description of the typical in-field application of the systems

Note:

Diversity in device selection is desirable. Products should be selected from different fleets and applications when multiple applications are verified. Where there is a large population of products used in a particular application (such as school buses) at least some of the devices selected for testing should come from that particular application. Additionally, if a product may be used with different fuel sulfur levels, devices from fleets that use those different fuels should be selected. Also, products where there are different versions, such as different sizes or methods of containment (such as a muffler catalyst application vs. a separate DOC) should also be appropriately represented.

For each technology to be evaluated, please include a brief description of the devices tested, results and testing used in your original verification. This should also identify the test engine(s), laboratory, and test cycles.

While manufacturers may propose a list of representative retrofit systems to be tested, EPA and/or ARB may ask the manufacturer to concentrate on a subset of equipment or models.

II. Test location(s) & brief description of the facility and equipment

III. Test Procedures

- If testing on an engine dynamometer, a description of the proposed test engine(s)
- If testing on a chassis dynamometer, a description of the proposed vehicle(s) and engine(s)
- Proposed test fuel(s).
- Pollutants to be measured (HC, CO, CO₂, NO_x, NO₂, PM, SOF, etc.)
- Other measurements to be recorded such as exhaust temperature, exhaust back pressure, etc.

- Proposed test cycles and test sequence(s)-cold & hot start, repeat testing, etc. for the baseline and devices
- All anticipated deviations from test procedures
- Other issues or questions related to testing

Notes:

At this time, portable emission measurement devices are not envisioned for in-use retrofit testing since PM measurement accuracy with portable devices has not been evaluated. All test results must be reported. Devices must be operated normally in-use prior to testing. Unless specifically described in the test plan, devices may not be conditioned, cleaned or modified prior to testing. The proposal should suggest appropriate conditions or conditioning (if necessary) for device testing.

IV. Expected number of devices to be procured and tested

V. For each device / engine for Phase 1 (operated for at least one year or to within three months of first maintenance) and for Phase 2 (operated for between 60 and 80% of the minimum warranty period designated by ARB)

- Source - Fleet, application
- Relationship (if any) between the fleet and retrofit manufacturer
- Fuel(s) used before and after the devices were installed
- Brief explanation of the vehicle's use
- Device use history - currently installed or already removed from service
- Device age - hours / miles, prior to retrofit & with retrofit
- Engine maintenance and repair history
- Device maintenance and repair history

VI. Schedule (please address for Phase 1 and Phase 2)

- Device procurement
- Testing

- Initial results report (indicating test results quickly after tests are completed)
- Final report of results and conclusions (indicating testing was completed in accordance with the test plan and applicable test procedures - stating necessary quality assurance, quality control, and data quality management followed)

VII. Other related information

- If you believe additional information such as existing reports or data may supplement or improve the focus of your in-use testing program, please provide that supplemental information with a description of your proposed testing.